

IN THE CLAIMS

Please amend the claims to read as follows:

Listing of Claims

1-12. (Canceled).

13. (New) An adaptive modulation communication system comprising a transmitting apparatus and a receiving apparatus, wherein:

(a) the transmitting apparatus comprises:

a determiner that determines a modulation level for modulating transmission data;

an adder that adds an error detecting bit to the transmission data per predetermined error detecting unit in the transmission data; and

a transmitter that transmits a number of error detecting units in accordance with the modulation level simultaneously as a transmission unit; and

(b) the receiving apparatus comprises:

a receiver that receives the transmission unit; and

a demodulator that demodulates the error detecting units in the transmission unit using different demodulation patterns respectively, wherein:

the demodulator uses demodulation patterns that apply to a modulation scheme of a largest modulation level determined by the determiner.

14. (New) The system of claim 13, wherein the determiner determines the modulation level using a number having an integer square root.

15. (New) The system of claim 13, wherein the determiner determines the modulation level using a number not having an integer square root.

16. (New) The system of claim 13, wherein:
the transmitting apparatus further comprises a modulator that modulates the transmission data at a modulation level determined by the determiner; and

the modulator modulates the transmission data by arranging signal points such that a difference between a number of signal points in an I-axis direction and a number of signal points in a Q-axis direction is minimum.

17. (New) The system of claim 13, wherein:

the transmitting apparatus further comprises a modulator that modulates the transmission data at a modulation level determined by the determiner; and

the modulator modulates the transmission data using a modulation scheme in which a phase direction is identified by an axis that crosses an origin point in a signal space diagram.

18. (New) The system of claim 17, wherein the modulator modulates the transmission data using a modulation scheme in which an amplitude direction is identified by an axis that crosses an origin point in a signal space diagram.

19. (New) The system of claim 17, wherein:
the adder adds the error detecting bit every plurality of bits collectively;

the receiving apparatus further comprises a detector that performs error detection of each demodulation result in the demodulator using the error detection bit; and

the detector outputs a bit without an error as an effective bit transmitted from the transmitting apparatus.

20. (New) The system of claim 13, wherein, upon a transmission of a pilot signal, the transmitter transmits the

pilot signal arranged in the middle of a maximum amplitude in a signal space diagram of the modulation scheme of the largest modulation level determined by the determiner.

21. (New) The system of claim 13, wherein the receiving apparatus further comprises:

a detector that performs error detection of a demodulation result in the demodulator per error detecting unit; and

a repeat requester that sends a repeat request to the transmitting apparatus according to an error detection result, per error detecting unit.

22. (New) The system of claim 21, wherein the determiner determines the modulation level based on channel quality estimated from the repeat request.

23. (New) A receiving apparatus for use in an adaptive modulation communication system, said receiving apparatus comprising:

a receiver that receives a transmission unit including a number of error detecting units in accordance with a modulation level; and

a demodulator that demodulates the error detecting units using different demodulation patterns respectively,

wherein the demodulator uses demodulation patterns that apply to a modulation scheme of a largest modulation level.

24. (New) A transmitting apparatus for communicating with the receiving apparatus of claim 23, said transmitting apparatus comprising:

a determiner that determines a modulation level for modulating transmission data;

an adder that adds an error detecting bit to the transmission data per predetermined error detecting unit in the transmission data; and

a transmitter that transmits a number of error detecting units in accordance with the modulation level simultaneously as a transmission unit.